The Input Coding Manual for the Linotron™ 101

Mergenthaler Linotype

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INTRODUCTION

The Linotron 101 is a digital laser typesetter with 512k of memory that is used to store programs, fonts, and transmitted text for typesetting. It consists of a laser recording unit, one or two mini floppy drives, and a computer. The Motorola 68000 is the CPU for this slave typesetter.

The L101 is a page oriented typesetter which buffers a full sheet of text data for output. The maximum job length is 135 picas. The data input structure is a Mergenthaler Linotype typesetting language CORA.

This manual contains the text commands for the Linotron 101 typesetter in CORA. Use these text commands to determine the appearance of your copy. The manual organizes the text commands in three categories: Machine Commands, Fixed Commands, and Variable Instructions. These categories are described in detail. There is an Example Section to help you learn how to use the text commands. It shows the actual input and output. Also, there is a table at the end of the manual which lists and defines the typesetting instructions. After you have finished reading this manual, use the table as a quick reference guide.

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CONTROL INSTRUCTIONS

Control instructions are defined in the input data stream using 6 level TTS in any of three ways.

1. Machine Commands - Certain TTS codes represents a control instruction without the requirement of any additional information. These commands have an unchangeable meaning to the typesetter (e.g. the TTS input code 76 represents quad right).
2. Fixed Instructions - These instructions are always preceded by a BELL command and consists of a fixed number of alphabetic, numeric or alpha-numeric characters, depending on the particular command. No terminating code is required, since the length of the command is determined by the particular instruction.
3. Variable Instructions - These instructions consist of a mnemonic which represents a function or condition followed by a numeric value. The instructions are always preceded by an open format code (Elevate Key) and terminated by an End Format Code (Paper Feed Key). Any number of variable instructions can be keyboarded between one pair of Open Format and End Format Codes.

NOTE

Machine, fixed and variable commands can be input in either the shift or unshift mode, unless otherwise stated.

The following sections describe each machine, fixed and variable instruction.

MACHINE COMMANDS

The machine commands described below represent various functions pertaining to the Linotron 101.

END OF LINE INSTRUCTIONS

Any of the following four instructions (Return, Quad Left, Quad Right and Quad Center) may be used to terminate a line of text. Ordinarily, the quad left instruction is used to terminate a paragraph. This will set the last line of the paragraph flush with the left margin. However, after keyboarding a particular line of text, the operator has the option of either setting the line flush left, flush right, centered, or justified. Remember, each line of a specific paragraph need not be quadded. Only the last line must be manually set flush left.

Return

This code terminates a line of type. The action of this instruction is dependent on the conditions described below.

1. In the non-tabulation mode, and without leaders in the line, the line is justified and set. The end of line film advance will take effect and the next line will begin.

   With no word spaces, text is quadded left in the absence of other directives. If word spaces exist, they are expanded to justify the text. If the word spaces exceed the maximum value allowed, then letterspacing, if enabled, will be applied evenly with word spaces set to the maximum.

   If the width setting was changed in the line, spaces will be set in proportion to the set width applying to each word space. If the line exceeds the permitted length with spaces at their minimum value, the line will be set in this manner. Note that the defined minimum, average and maximum space values must coincide with those in the H & J program which is driving the system.
2. In the tabulation mode, each column will already have been justified. The line is terminated, end-of-line film advance is applied and the next line is begun in the non-tabulation mode.
3. If the line contains leaders, the Return instruction functions as follows:
   - ▶ It sets word spaces before and/or after the leader position to the minimum value.
   - ▶ It inserts a space before the leader position, if required to align leader characters vertically on successive lines.
   - ▶ It inserts as many leaders as necessary to fill the space available for them.
   - ▶ It inserts a space after the leaders, and if there is no room for another character.

   If the line is tight when the return code is encountered, no leaders are inserted and word spaces are set to the minimum values. In addition, text before the leader instruction is quadded left, film advance occurs and text after the instruction is quadded right on the next line.

Quad Center

This code denotes the end of a line. Word spaces are set to the average value and residual space is evenly distributed at the beginning and end of the line. In this way, the line will be centered. When this code is used during tabulation, it denotes the end of the column. If either the line or tab column contains leaders, the Quad Center code is processed in the same way as a "Return."

Quad Right

This code is interpreted in the same way as Quad Center except that all residual space is placed at the beginning of the line.

Quad Left

This code is interpreted in the same way as a Quad Center except that all residual space is placed at the end of the line.

COMMAND CODES

The following codes are used to define a variable and/or fixed instruction. They are used as "flag" codes in the sense that they alert the Linotron 101 of upcoming machine instructions.

Format (Elevate)

This code defines the start of a variable instruction sequence and is referred to as: **(**.

End Format (Paperfeed)

This code should only appear as the terminator of a variable instruction sequence and is referred to as: **)**. It ends the variable instruction definition.

Bell

This code defines the start of a fixed instruction.

KEYBOARD STATUS CODES

The operator has the option of accessing characters/symbols in one of three ways: shift, unshift and supershift.

Shift

This code indicates that subsequent characters are in the upper case or "shift" mode.

Unshift

This code indicates that subsequent characters are in the lower case or "unshift" mode.

Supershift

This code denotes that only the next character entered will be in the shift mode. The mode then reverts to that which was in effect before the supershift.

WORDSPACES AND FIXED SPACES

Interword spaces (spacebands) are defined from a minimum to a maximum value. In contrast, fixed spaces are font dependent. Fixed space size varies from one font to the next. However, their size is consistent or "fixed," on the same font. Fixed spaces are used primarily to add desired white space on a line. A single fixed space, multiple fixed spaces or mixed fixed spaces may be used.

Space

This code defines a word space which may vary from a defined minimum value to a maximum value in order to justify a line of type. Default values are:

Minimum spaceband	2/18 of an em
Average spaceband	6/18 of an em
Maximum spaceband	18/18 of an em

NOTE

Minimum, Average and Maximum wordspace values may be changed via the variable wordspace command (1Wx,y,z).

Thin Space

This code indicates that a thin space, equal to a predetermined number of relative units, should be output to the typesetter. A thin space equals the width of the period (or comma) on the current font.

En Space
This results in the setting of a space which equals the width of a zero on the current font.

Em Space
This results in the setting of a space equal in width to the number of points defined in the last set width instruction.

MISCELLANEOUS MACHINE COMMANDS
The following two commands have no typesetting significance to the LIN101 Program.

Rub Out
This code has no typesetting significance and is ignored by LIN101 software.

Tape Feed
This code has no typesetting significance and is ignored by LIN101 software.

FIXED INSTRUCTIONS

The fixed instructions (BELL codes) described below represent those codes that control the parameters of the final, typeset output. These instructions are known as "fixed" because they require a "fixed" number of alphabetic, numeric or alpha-numeric characters following the BELL command. They either stand alone (e.g. BELL AH) or are followed by a "fixed" number of digits (e.g. BELL AF + 2 digits).

CHARACTER FIT INSTRUCTIONS
The following instructions control character fit. When white space between particular letter combinations or between all letters is reduced, it is known as "kerning." The specific letter combinations where kerning may be desired, and the amount of kerning to be used, is an operator preference. Those character combinations where kerning may be desired include: "te," "ta," "ra," "va," "ti," and "to." By using specific instructions, kerning can be an automatic operation. This means that white space may be automatically decreased between all letters until the instruction is cancelled.

Various instructions may be used in order to increase white space between letter combinations. This increase may be desired to achieve specific typographic effects.

BELL AL - Allow Letterspacing
This command may be entered anywhere within the text and takes effect immediately. Any text that follows the BELL AL instruction will be letterspaced if the maximum allowable interword space value has been reached and justification of that line is still not possible. Any excess space will be distributed in tenth point increments between characters starting at the beginning of the line and until justification is achieved.

BELL XL - Cancel Letterspacing
This command prevents excess character space from being distributed between characters. The maximum permitted interword spacing may, however, be exceeded to achieve justification under these conditions.

BELL AF - Allow Forwardspace
This command, followed by 2 digits (01 to 99), specifies the number of 54ths of an em of additional space to be added before the subsequent character is typeset. The value is relative to the current point size. The command is valid for one character only and it self cancels.

BELL AB - Allow Backspace

This command, followed by 2 digits (01 to 99), specifies the number of 54ths of an em of backspace to be applied to the following character only. The value is relative to the current point size. This command self cancels.

BELL 0 to BELL 9 - Fixed Units of Space

This command, followed by a single digit from 0 to 9, specifies the number of 18ths of an em of additional space to be added before the subsequent character is typeset. The value is relative to the current point size. The digit 0 allows ten relative units of space. If a value greater than ten is required, the appropriate commands can be input in succession (e.g. BELL 0 + BELL 8 = 18 units). The instruction is valid for one character only and it self cancels.

BELL Q - Kern

This command, followed by a single digit from 0 to 9, specifies the number of 18ths of an em by which the next character is to be moved closer to the preceding character. Zero equals 10/18 of an em. This command applies to one character only and it self cancels.

BELL AE - Auto Expansion

This command, followed by a single digit from 1 to 9, will initiate 1/54th to 9/54ths of an em of letterspacing to be added to each character until cancelled. This command cancels the effect of any BELL AK command. A BELL AE0, BELL XE or BELL XK instruction cancels this command.

BELL XE - Cancel Auto Expansion

This command cancels the effect of any BELL AE or BELL AK command. BELL XK and BELL AE0 have the same effect.

BELL AK - Auto Kern

This command, followed by a single digit from 1 to 9, will initiate 1/54th to 9/54ths of an em of kerning to be applied to each character until cancelled. This command cancels the effect of any BELL AE command. A BELL AK0, BELL XK or BELL XE instruction cancels this command.

BELL XK - Cancel Auto Kern

This command cancels the effect of any BELL AK or BELL AE command. BELL XE and BELL AK0 have the same effect.

FLASH/NO FLASH INSTRUCTIONS

The flash/no flash instructions control actual exposure of characters on the film or paper. When a character is not "flashed" or exposed, the width of the character is accounted for, however no actual exposure occurs.

BELL XP - Cancel Print

The Cancel Print command prevents subsequently entered text from being exposed to the photographic material. The typesetter will perform all normal functions other than exposure. The command has an immediate effect and can be entered anywhere within text. A BELL AP instruction cancels this command.

BELL AP - Allow Print

The Allow Print command permits actual exposure of film to take place. The command has an immediate effect and can be entered anywhere within the text. A BELL XP instruction cancels this command.

CHARACTER SLANT INSTRUCTIONS

Although the variable instructions control the three digit font selection, the following two fixed instructions control the slant of characters (i.e. achieving a different effect from a specific font change).

BELL I - Italic (Electronic Slant)

The BELL I command causes subsequent characters to be electronically slanted 14 degrees to the right, thereby creating an italic effect. It should be noted that this is not a true italic. This command is immediate and remains in effect until cancelled with the BELL R command.

BELL R - Roman

The BELL R command cancels the electronic slant status established by the BELL I command. All subsequently entered characters are typeset with a vertical y-axis. The command is immediate and remains in effect until a BELL I command is encountered.

VERTICAL AND HORIZONTAL RULE INSTRUCTIONS

The following instructions must be used to set vertical or horizontal rules of varying weights.

BELL Thin Space - Vertical Rule

This command is followed by a single digit (0 through 9) which defines the weight of the vertical rule; the height is equal to the current leading value (VARIABLE command L). If the leading is zero, the current point size value defines the height. The vertical rule is generated from the current baseline to the height specified by the leading value. Character escapement is equal to the width of the rule. There is no white space on either side of the rule. The standard weights are as follows:

BELL Thin Space	0 = 0.5 pt. rule	5 = 6 pt. rule
	1 = 1 pt. rule	6 = 8 pt. rule
	2 = 1.5 pt. rule	7 = 12 pt. rule
	3 = 2 pt. rule	8 = 16 pt. rule
	4 = 3 pt. rule	9 = 24 pt. rule

BELL En Space - Horizontal Rule

This command, followed by a single digit from 0-9, causes a horizontal rule to be drawn from the baseline, with a height defined by the 0-9 figure and a width equal to an en, relative to the established set width. Character escapement is equal to the width of the rule. There is no white space on either side of the rule. (Refer to the BELL Thin Space command for 0-9 weight values.)

EnJx,yKx,y - Page Rule

The Page Rule command is used to make horizontal and vertical rules (where n is the weight of the rule). The starting coordinate, J, is always the rule position closest to the start of job (0,0), and the ending coordinate, k, is always the end of the rule. The J and K coordinates are in points and tenth of a point increments.

INFERIOR AND SUPERIOR CHARACTER INSTRUCTIONS

The Linotron 101 software provides the user with the ability to create inferior and superior characters from the prime size character. The instructions that control this feature are described below. In addition, a description of the Autofraction (BELL Y) command has been included as this command uses prime characters (reduced by a certain percentage) to create bar fractions.

BELL D - Inferiors (Refer to Figure 1)

The BELL D command, followed by a 1, 2, or 3, will set the next entered character as an inferior, as defined by the control value:

1 = inferior on inferior
2 = 1st order inferior
3 = superior on inferior

This command is valid for one character only.

BELL U - Superiors (Refer to Figure 1).

The BELL U command, followed by 1, 2, or 3, will set the next entered character as a superior, as defined by the control value:

1 = inferior on superior
2 = 1st order superior
3 = superior on superior

This command is valid for one character only.

BELL L - Display Superior (Refer to Figure 2)

The BELL L command will set the next character as a top aligning display superior. The point size is changed to 50% of its current value and a base jump is applied in order to top align the reduced character with the previous character. This command is valid for 1 character only.

BELL Y - Autofraction (BELL Yxxx/xxxBELL Y) (Refer to Figure 3)

The Autofraction command creates a bar fraction using characters from the current font. The figure(s) following the first BELL Y instruction denotes the numerator which will be set at 60% of the prime number size, with 70% of the established set width. The numerator will top align, thereby raising the basement 40% of the height of the prime size number. The oblique stroke (sequence no. 81) must be used as the fraction bar. The figure(s) following the fraction bar and preceding the second BELL Y instruction denotes the denominator. These figures follow the same reduction percentage as the numerator and are base aligned with the prime size.

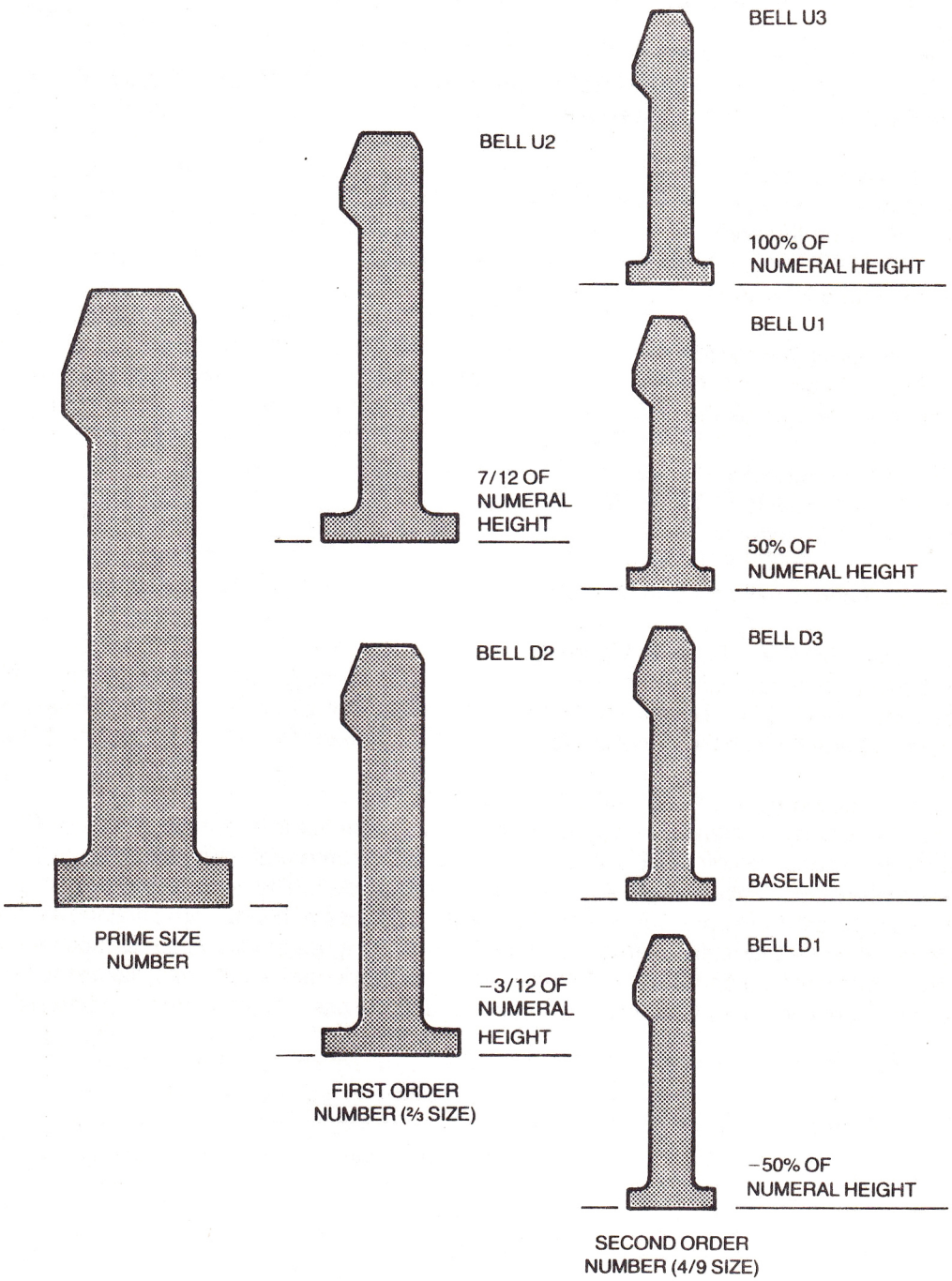


Figure 1. Superior (BELL U) and Inferior (BELL D) Sizes and Alignment

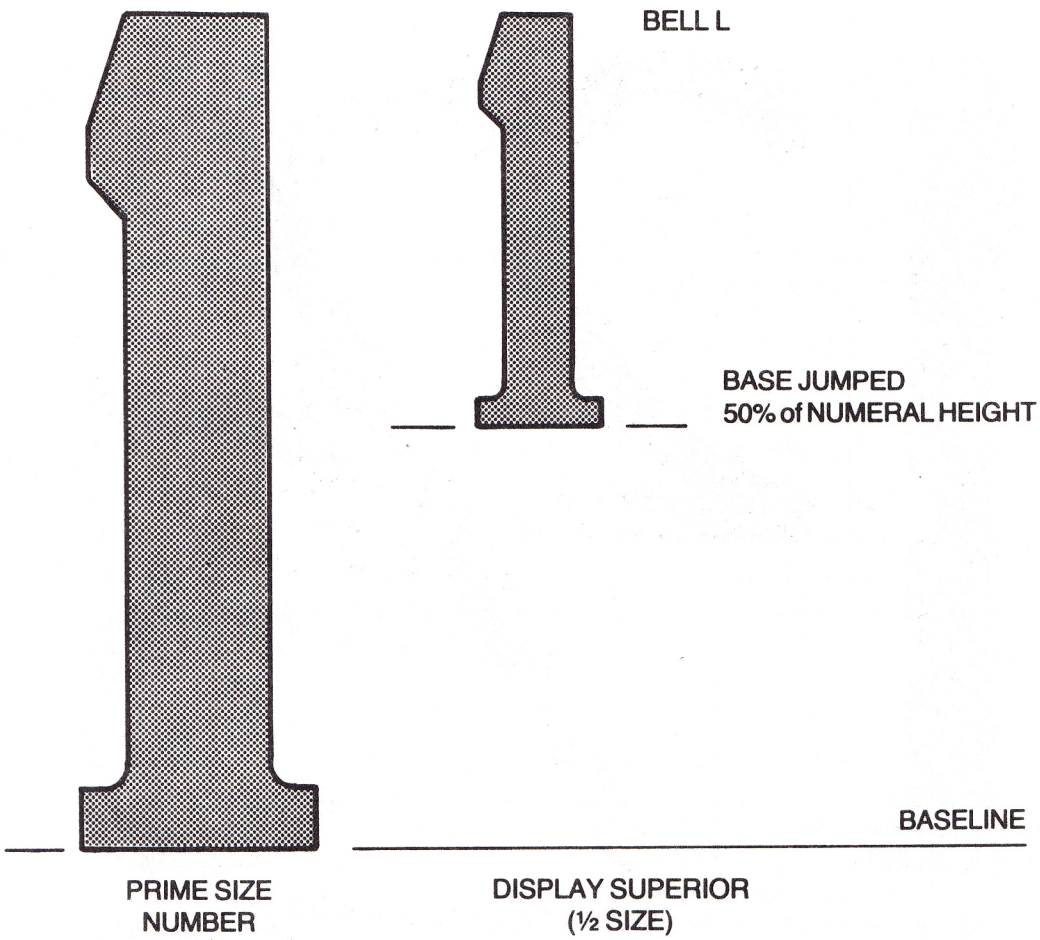


Figure 2. Display Superior (BELL L) Size and Alignment

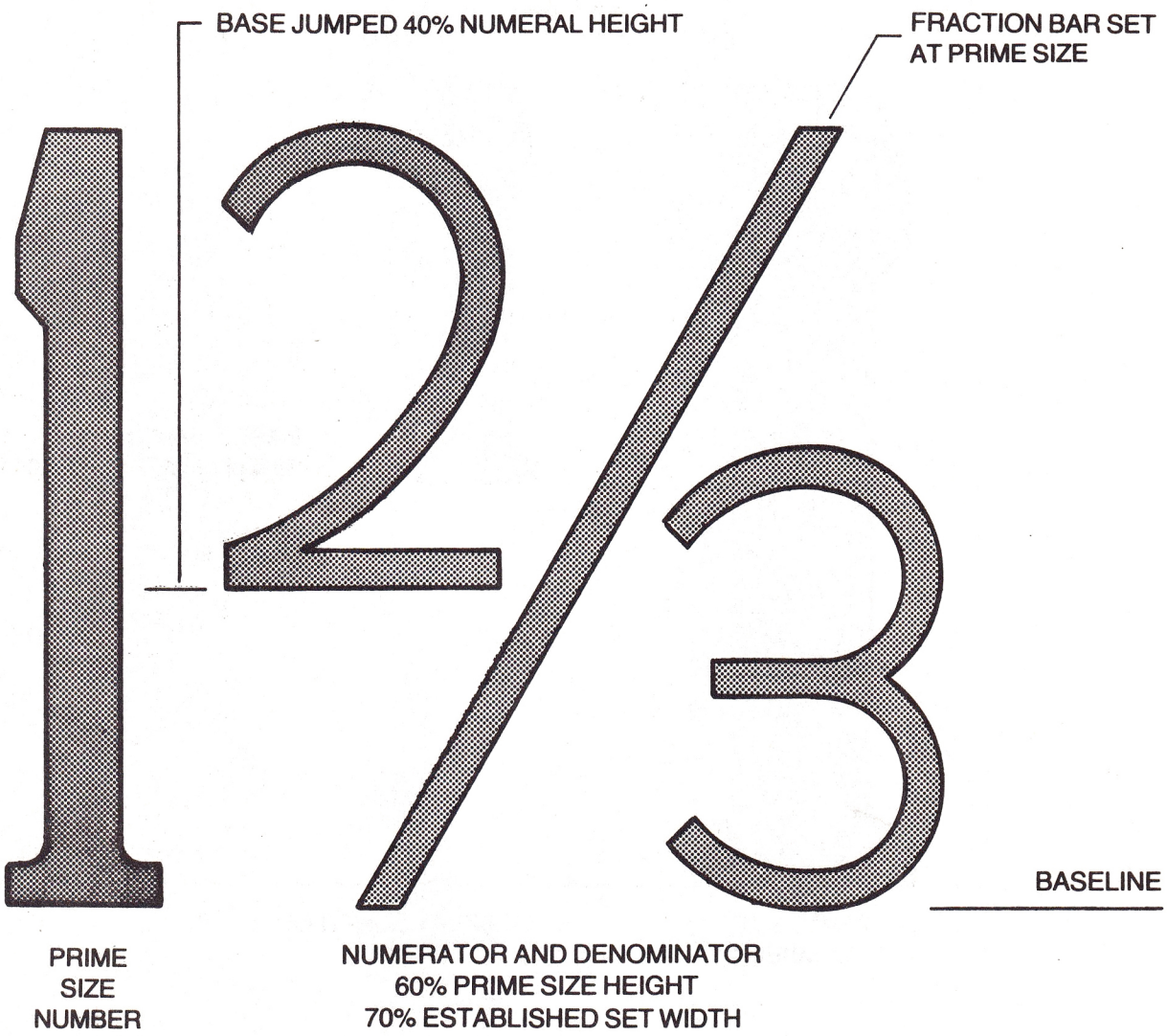


Figure 3. Autofraction (BELL Y) Size and Alignment

TABULATION INSTRUCTIONS

The LIN101 software enables a user to set a maximum of 30 vertical or horizontal tab columns. Vertical tabulation sets lines of justified text one after the other in pre-selected columns. As an operator completes one column of text, the LIN101 software reverses lead to the start of that column, and typesetting shifts to the next column.

Horizontal tabulation sets a line of text in one column and then, following a line ending code (Quad Left, Quad Right, Quad Center, BELL Return, BELL E, etc.), shifts the point of typesetting to the start of the next column. During this shift from one column to the next, no advance of photographic paper or film occurs.

Column widths are defined by the variable instruction ⟨TnMx⟩. Refer to the Variable Instruction section of this manual for an explanation of this command.

BELL VS - Start Vertical Tabulation

This command initiates vertical tabulation. In this mode, lines of justified text are set in columns defined by a tabulation measure instruction (variable instruction ⟨TnMx⟩). All normal typesetting commands are then available for use.

BELL VC - Vertical Tabulation Column Change

The BELL VC command signals a column change. It must precede text in every column except the first. After reverse leading to the start of the first column, the next column measure is in effect. Subsequent text is moved to the right by an amount equal to the width of the preceding column.

BELL VE - End Vertical Tabulation

The final column of text is terminated with the BELL VE command. This command returns the typesetter to the left margin and advances the paper/film the specified leading value following the deepest column.

BELL Return - Column Justify

In tabulation, the BELL Return command causes justification of text in a line by increasing the wordspacing. This is performed until justification is accomplished in the same way that a RETURN command causes justification of text in a line.

BELL T - Start Horizontal Tabulation

This command signifies that the first tabular column measure, defined by variable instruction ⟨TnMx⟩, is used for the following text. From this point, each quad command acts as a signal to terminate the current column and to access the next column measure without advancing the photographic material. A BELL Return command can also be used to terminate the current column and to increase word spacing within a column until that column is justified. The end of tabulated line and the end of the tabulation mode is signified by the Return code placed after the quad in the last column.

The return code advances the photographic material by the current end of line leading value, and accesses the normal line measure. The BELL T command must follow the return code if the tabulation mode continues on the next line.

TABULATION VARIABLE INSTRUCTIONS

The following instruction is used to define the column widths for tabular material. This instruction is used with the various fixed instructions described previously.

TnMx - Define Tabulation Measure

This instruction is used to define a series of column measures for use in horizontal or vertical tabulation. A maximum of 30 columns may be defined from left to right. The field 'n' of the instruction defines the column number from 0 to 29. The 'Mx' field defines the measure for the column, where 'x' is in picas and points (i.e. as defined in the line measure instruction). The default value for column measures is 18 points. Column measures must be defined prior to entering the horizontal (BELL T) or vertical (BELL VS) tabulation mode. These column measures remain in effect until changed by a new instruction.
Example: ⟨TOM6T1M4T2M10⟩

MISCELLANEOUS FIXED INSTRUCTIONS

Miscellaneous fixed instructions control the following: placing piece accents, accessing pi characters, justifying with leadered characters, enabling a zero film advance, denoting the end of a job, ending a job take, and terminating a line.

BELL P - Piece Accents

The Piece Accent command automatically centers the character following the BELL P command above the character preceding the BELL P command. If the preceding character is keyed in the Shift mode, the accent is raised.

BELL J - Justify with Leaders

The BELL J command followed by a specified character (excluding a fixed space) or word space, fills excess space in a line with that character. The text before the BELL J command is quadded left, the text after the BELL J command is quadded right, and the space in between is filled with the leadered character after the Return code. Word spaces are set to the average value. If the return instruction is given and there is no room to insert leaders, the text preceding the leader instruction is quadded left, and the text following the instruction is placed on the next line and quadded right; leaders are not inserted.

BELL Z - Zero Film Advance

The BELL Z command causes zero film advance to take place at the end of the line. The command can be introduced anywhere within a line, but only affects the current line.

BELL.xyy - Access Pi Character

The BELL. (period) command accesses pi characters by their sequence numbers minus one. The font must be loaded in a unique fashion. (Refer to the Linotron 101 Operator's Manual.) The BELL. command is followed by three digits. The first digit, x, is the last digit in the CFD number. The next two digits, yy, indicate the sequence number minus one of the desired pi character. Determine this number by finding the respective Pi character in the Pi layout chart and subtracting one from that number.

BELL O - End of Job

The BELL O is used to distinguish the end of job from the end of take. It indicates that the job is finished and cancels all previous BELL or VARIABLE commands. The default parameters are reinstated and the Linotron 101 is in an ON-LINE/IDLE state.

BELL S - End of Take

The BELL S command acts as an end of take and marks the end of data. This command reinstates the default parameters and the Linotron 101 is in an IDLE state.

VARIABLE INSTRUCTIONS

Variable instructions consist of a character(s) which represent a function or condition, followed by a numeric value. All variable instructions are preceded by an 'open format' (code (Elevate Key) and are terminated by an 'end format') code (Paper Feed Key). Any number of variable instructions can be keyboarded between an 'open format' and 'end format' code.
(e.g. (M12.4F19H12L12)).

TEXT PARAMETER INSTRUCTIONS

The following variable instructions control basic text parameters (i.e. line length, type size, line leading, font selection, etc.). These parameters ordinarily appear at the start of any job, otherwise the default values are used. However, they may be changed at any point while inputting text.

M - Line Measure

This instruction, followed by a pica and point value (separated by a period), specifies the line measure for subsequently entered text. This value may not exceed 70 picas. For example, a measure of 10 picas and 10 points is entered (M10.10).This instruction takes effect immediately if it precedes the characters in a line, or if it is entered within a line, it takes effect at the start of the next line. The default line measure is 11 picas.

R - Millimeter Measure

The line length may be specified in millimeters. This instruction operates in the same way as the pica measure command.

F - Font Selection

The Font Selection instruction, followed by a figure from 1 to 9989, specifies the font used for text (e.g.(F125) is font no. 125). Figures 9990-9999 specify the pi font. For example, ⍙.054 indicates that pi font 9990 is used. The last digit of the pi font (0) is the first digit or the font call in the BELL. command. The last two digits (54) refer to the pi character on the pi font.

H - Height and Width Change

The height and width instruction is expressed in points and a half point designation (.5). It specifies the height and width for typesetting subsequently entered characters. The type size range is from 4.5 point to 72 point in half-point increments. When requesting half-point sizes, a period separates the whole number from the decimal half-point. The instruction takes effect immediately. The default height and width size is 8 point.

W - Set Width Change

The set width instruction is expressed in points and a half point designation (.5). It specifies the set width for remaining text. When used, this command alters only the set width. The height remains at the last stated type height size, or if a height is not defined, the default value is used.

1Wx,y,z - Word Spacing

This instruction allows the minimum (x), average (y) and maximum (z) interword spacing values to be defined for a particular job. The values are expressed in 1/18 of an em and must be in the range of 2 to 18. Typically, the minimum (x) value is less than the average (y) value which is less than the maximum (z) value. This command must be positioned at the beginning of a line and ordinarily only at the start of a job. The default values are as follows:

Minimum	2/18 em
Average	9/18 em
Maximum	18/18 em

Xx,y - Page Position

The page position command, followed by a coordinate, defines the start of line relative to the start of job. Each line after this command starts at this new position. The distance from the left, x, and the distance from the start of job, y, are in points and optionally tenth of a point increments.

L - End of Line Leading

The End of Line Leading instruction specifies the amount of photographic material advanced for each line of output. Leading can range from 0 to 1632 pts. and it is expressed in points and tenth of a point increments. The instruction can be placed anywhere within a line, but takes effect at the end of the current line. The default leading is 8 pts.

A - Advance Film Immediate

The Advance Film instruction advances photographic material by the specified amount before printing more characters. It is expressed in points and tenth of a point increments. Immediate Film Advance is available from 1638 pts. minus the current page depth, and it is a one time command that takes place immediately.

B - Back Film Immediate

The Back Film instruction reverses photographic material by the specified amount before printing more characters. It is expressed in points and tenth of a point increments. Film back up is specified in points and tenth point increments. The back up may not exceed the start of job. This is a one time command and takes place immediately.

INDENT VARIABLE INSTRUCTIONS

The following variable instructions are used to specify an indent. An indent value is the distance between the left or right margin and the text.

An operator has the option of specifying an indent from either the left, right, or both margins. An indent can also specify the number of lines the indent is in effect.

V - Vary Line Start

The Vary Line Start instruction, followed by a measure in picas and points, defines the line start position relative to the margin. Each new line returns to this new start of line position until cancelled by a V0 instruction. The vary line start command is added to the page position instruction.

IpLn - Indent Left for 'n' lines

The Indent Left instruction is defined in picas and points, and specifies the amount indented from the left margin. The value of the indent is subtracted from the current measure, and it continues until cancelled or replaced by another indent left instruction. The indent cancels automatically by specifying the number of lines after the 'L'. If the instruction is placed at the start of a line, it operates immediately, otherwise it will not take effect until the next line. If the operator does not specify the number of lines, the command continues until cancelled. This command is cancelled by specifying any of the following instructions: ⟨IC⟩, ⟨I0L⟩, ⟨IL⟩, or ⟨ITLn⟩.

IL - Cancel Indent Left

This command will cancel an indent Left ⟨IpL⟩ instruction.

IpRn - Indent Right for 'n' lines

The Indent Right instruction operates exactly as Indent Left, but the value of the indent is subtracted from the right-hand side of the line measure and not from the left. This command can be cancelled by specifying any of the following instructions: ⟨IC⟩, ⟨I0R⟩, ⟨IR⟩, ⟨ITRn⟩.

IR - Cancel Indent Right

This command cancels an Indent Right ⟨IpR⟩ instruction.

ITLn - Indent to Text Position from Left

The Indent Text Left instruction, when placed within a line, causes subsequent lines to be indented on the left and aligned vertically where the instruction was inserted. As with the previous indents, it may self cancel after a specified number of lines by including a value in the 'n' position. If the self-cancel facility is not used, a Cancel All Indents ⟨IC⟩ instruction is the only method of returning to the normal line measure.

ITRn - Indent to Text Position from Right

The Indent Text Right instruction operates exactly as Indent Text Left, except that subsequent lines are indented from the right-hand side of the current measure rather than from the left.

IC - Cancel All Indents

When entered at the start of a line, this instruction is in effect immediately. If the instruction is entered within a line, it is in effect on the succeeding line. The ⟨IC⟩ instruction cancels all indents.

MISCELLANEOUS VARIABLE INSTRUCTIONS

The following miscellaneous variable instructions control a base line jump of a single character with forward and backward absolute spacing between characters.

J - Base Line Jump for One Character

Any character that is entered following the Base Line Jump instruction will be positioned either above or below the baseline, by the amount specified in points and 1/10 points (ie. .2, .5, .7). Base line jump is applied to the next character only. Subsequent characters are then set at the standard baseline position. Values less than 100 represent negative (downward) jumps, and values greater than 100 represent positive (upward) jumps. The value 100 is added to differentiate between a positive and negative jump. The largest jump is 100 points in either direction.

S - Forward, Backward Absolute Spacing

The instruction, followed by 1 to 4 digits expresses an incremental, absolute, positive, horizontal shift between characters in units of 1/10 point. A hyphen code (minus) before the digit(s) allows movement to the left. This instruction is effective immediately and for one time only.

1Vx,y - Reverse Video

The reverse video command sets a defined area in black on white. The width of the reverse area, x, is in points and optionally tenth of a point increments. Use the page position command (Xx,y) to place your copy on the page. The depth, y, is the value of the current point size plus the distance from the baseline to the bottom of the reverse area. This command must be followed by a BELL AV9.

1Hr - Resolution

The Linotron 101 is capable of typesetting in three resolutions: low (362 lpi), normal (723 lpi), and high (1446 lpi). This command determines the resolution where r is L for low resolution, X for normal resolution, or A for high resolution.

LINOTRON 101
INPUT CODING

Table 1. Linotron 101 Input Codes

INSTRUCTION	DESCRIPTION
Command Instructions	
Format (‹) Elevate	Defines start of a variable instruction.
End Format (›) Paper Feed	Defines end of a variable instruction.
Bell	Defines start of a fixed instruction.
Keyboard Status Codes	
Shift	Defines upper case mode.
Unshift	Defines lower case mode.
Supershift	Defines third mode for character access.
End of Line Instructions	
Return	Terminates a line of type and forces justification of the line.
Quad Center	Terminates and centers a line of type.
Quad Right	Terminates and sets a line of type flush right.
Quad Left	Terminates and sets a line of type flush left.
Spacebands and Fixed Spaces	
Space	Variable space (minimum to maximum)
Thin Space	Space equal to the width of a period or comma on current font.
En Space	Space equal to numeral zero width on current font.
Em Space	Space equal to the last set width instruction.
Text Parameters	
‹Mxx,yy›	Establishes the pica and point value of the line measure.
‹Rxxx›	Establishes the line measure in terms of millimeters.
‹Fxxx›	Specifies the font that is to be used for subsequent entered text.
‹Hxx.y›	Establishes both the height and width of type in points (x) and a half point designation (y).

Table 1. Linotron 101 Input Codes (cont'd)

INSTRUCTION	DESCRIPTION
Text Parameters (cont'd)	
‹Wxx.y›	Alters only the width of type and is specified in points (x) and a half point designation (y).
‹1Wx,y.z›	Defines the minimum (x), average (y) and maximum (z) interword spacing values in 1/18ths of an em.
‹L + points and 1/10 points›	Specifies the end of line leading and is expressed in points and tenth-points.
Typeface Style	
Bell I	(Italic-Electronic slant) Causes subsequently entered characters to be electronically slanted 14° to the right, creating an italic effect.
Bell R	(Roman) Cancels the electronic slant status.
‹F + maximum 4 digits›	Used to make a font change.
Positive and Negative Film Advance	
‹A + points + 1/10›	Immediately advances the photographic material by the specified amount.
‹B + points + 1/10›	Immediately reverses the photographic material by the specified amount.
Character Fit	
Bell AL	Allows letterspacing.
Bell XL	Cancels letterspacing.
Bell AB + 2 digits	Allows Backspace - specifies the number of 54ths of an em of backspace for the next character only.
Bell AF + 2 digit	Allows Forwardspace - specifies the number of 54ths of an em of additional space before the next character only.
Bell + 1 digit	Causes the specified relative units of space to be inserted into the text.
Bell Q + 1 digit	Specifies the number of 18ths of an em of kerning for one character only.
Bell AE + 1 digit	Auto expansion instruction which initiates 1/54th to 9/54ths of an em of letterspacing.

Table 1. Linotron 101 Input Codes (cont'd)

INSTRUCTION	DESCRIPTION
Character Fit (cont'd)	
Bell XE	Cancels auto expansion.
Bell AK + 1 digit	Auto Kern instruction which intiates 1/54th to 9/54ths of an em of kerning.
Bell XK	Cancels the Auto Kern instruction.
Indents	
‹V + picas and points›	Varies the start of line by the specified amount.
‹IpLn›	Indents text from the left by the specified pica and point value for 'n' number of lines. If a specific number of lines is not stated, the left indent must be cancelled by the operator.
‹IL›	Cancels an indent left instruction (‹IpL›).
‹IpRn›	Indents text from the right by the specified pica and point value for 'n' number of lines. If a specific number of lines is not stated, the right indent must be cancelled by the operator.
‹IR›	Cancels an indent right instruction (‹IpR›).
‹ITLn›	The Indent to Text Position from the left causes subsequently entered lines to be indented on the left and align vertically with the point at which the instruction was entered. If a number of lines (n) is stated, the instruction will self cancel.
‹ITRn›	The Indent to Text Position from the right operates as described above (‹ITLn›), however lines are indented from the right-hand side of the measure.
‹IC›	Cancels all indents except the standard indent.
‹Xx,y›	The Page Position Command followed by a coordinate defines the start of line relative to the start of job. Each line after this command starts at this new position.
Tabulation	
Bell VS	Starts vertical tabulation.

Table 1. Linotron 101 Input Codes (cont'd)

INSTRUCTION	DESCRIPTION
Tabulation (cont'd)	
Bell VC	Vertical tabulation column change instruction.
Bell VE	Ends vertical tabulation.
Bell T	Starts horizontal tabulation.
Bell Return	Causes justification of text in a column.
‹TnMx...TnMx...TnMx...›	Defines a maximum of 30 tabulation measures (0 to 29) from left to right in picas and points.
Inferior and Superior Characters	
Bell D + 1, 2, or 3	Sets inferior characters as defined by control value 1, 2, or 3.
Bell U + 1, 2, or 3	Sets superior characters as defined by control value 1, 2, or 3.
Bell L	Sets top-aligning display superiors.
Bell Yxxx/xxxBell Y	(Autofraction) Creates a bar fraction using characters from the current font.
Vertical and Horizontal Rules	
Bell Thin Space + 1 digit	Causes a vertical rule to be drawn with a weight defined by the 0 through 9 digit and a height equal to the specified leading.
Bell En Space + 1 digit	Causes a horizontal en rule to be drawn with a weight defined by the 0 through 9 digit and a width equal to an en, relative to the established set width.
Bell Em Space + 1 digit	Causes a horizontal em rule to be drawn with weight defined by the 0 through 9 digit and a width equal to an em, relative to the established set width.
‹EnJx,yKx,y›	The Page Rule command is used to make horizontal and vertical rules (where n is the weight of the rule, J is the starting coordinate, and K is the ending coordinate.)
Flash/No Flash	
Bell XP	Cancels print (exposure) of characters on photographic material.

Table 1. Linotron 101 Input Codes (cont'd)

INSTRUCTION	DESCRIPTION
Flash/No Flash (cont'd)	
Bell AP	Allows print (exposure) of characters on photographic materials.
Miscellaneous Instructions	
Rub Out	No typesetting significance.
Tape Feed	No typesetting significance.
Bell P	Automatically centers the character following the instruction above the character preceding the instruction.
Bell.(period) + 3 digits	Accesses desired pi character.
Bell J + any character	Justifies a line with a specified leadered character.
Bell Z	Zero film advance instruction at end of line.
Bell O (character O)	Indicates the end of a job and cancels all previously selected instructions. Also, acts as an optional stop.
Bell S	Indicates the end of a take.
‹J + digits›	Any character that is entered following the Base Line Jump instruction will be positioned either above or below the baseline by the amount specified in points and 1/10 points.
‹Sxxxx›	Expresses an incremental, absolute, positive horizontal shift between characters in units of 1/10 points.
‹S-xxxx›	Expresses an incremental, absolute, negative (movement to the left) shift between characters in units of 1/10 points.
‹1Vx,y›	The reverse video command sets a defined area in black on white (where x is the width of the area and y is the value of the current point size plus the distance from the baseline to the bottom of the reverse area.) This command must be followed by a Bell AV9.
‹1Hr›	Determines typesetting resolution (where r is either L for low resolution, X for normal resolution, or A for high resolution.)

EXAMPLES

This section illustrates how to use the CORA language. The following key identifies the symbols used to input text.

SYMBOL KEY

⟨	Format (elevate)
⟩	End format (paper feed)
↑	Supershift
↵	Return
⊢	Quad left
⊣	Quad right
⊥	Quad center
□	Em-space
🔔	Bell code

ALLOW AND CANCEL PRINT

KEYSTROKES

⟨f82m35l12h12⟩□This example shows the effect of the Allow and Cancel Print instructions. Characters following the Cancel Print instruction are not typeset, but their character width is used. ⍙xpThis line will not be typeset. ⍙apThis line will be typeset.⊢
⊢
Cancel Print is helpful in eliminating guesswork if you do not know the value of an indent.⊢
⟨m15⟩⊢
90 - 100% 12 Students in Period 3⊢
⍙xp90 - 100% ⍙ap10 Students in Period 2⊢

TYPESET COPY

This example shows the effect of the Allow and Cancel Print instructions. Characters following the Cancel Print instruction are not typeset, but their character width is used. This line will be typeset.

Cancel Print is helpful in eliminating guesswork if you do not know the value of the indent.

90 - 100% 12 Students in Period 3
10 Students in Period 2

AUTO LEADER

KEYSTROKES

⟨f82m35l12h12⟩□This example shows the use of the auto leader instruction with the most commonly used leader characters. Notice that the lines are ended by a 'Return' rather than a quad code and that characters on successive lines are aligned by putting a small amount of space on either side of the characters used to fill the line (if they are not rules). The leader procedure is also used to form horizontal lines, using the Em or En rule.⊢
⊢
The ⍙j (word space) allows blank spaces to be left in the line.↲
⊢
The em rule ⍙j⍙□1 allows ruled spaces.↲
⊢
The fullpoint acts as the leader instruction:⊢
⊢
□□Jane Doe⍙j.645-5764↲
□□John Doe⍙j.354-5634↲
⊢
When too much information is set to go on one line, the line breaks as shown below:⊢
⊢
⟨m15⟩□□Jonathan Doe, 100 Park Avenue ⍙j.645-5764↲
□□Juanita Doe, ⍙j.354-5634↲
⊢

TYPESET COPY

This example shows the use of the auto leader instruction with the most commonly used leader characters. Notice that the lines are ended by a 'Return' rather than a quad code and that characters on successive lines are aligned by putting a small amount of space on either side of the characters used to fill the line (if they are not rules). The leader procedure is also used to form horizontal lines, using the Em or En rule.

The (word space) allows blank spaces to be left in the line.

The em rule _____ allows ruled spaces.

The fullpoint acts as the leader instruction:

Jane Doe 645-5764
John Doe 354-5634

When too much information is set to go on one line, the line breaks as shown below:

Jonathan Doe, 100 Park Avenue
645-5764
Juanita Doe, ... 354-5634

BASELINE JUMP

KEYSTROKES

(f82m35l12h12)□This example shows the use of the baseline jump facility. Numbers less than O(j3.2)n(j4.7)e hundred, jump downward, more than O(j103.5)n(j103.5)e hundred, jump upward.←

TYPESET COPY

This example shows the use of the baseline jump facility. Numbers less than O$_{ne}$ hundred, jump downward, more than O^{ne} hundred, jump upward.

BASIC PARAMETERS

KEYSTROKES

⟨f82m35l12h12⟩□This example demonstrates how to define and change font, ⟨f161⟩leading, point size, and measure. There is no limit on the number of font changes within a line. ⟨f82⟩The placement of commands is important. When using numerous leading instructions within a line, the ⟨l14⟩last instruction in that line will take effect after the line ending instruction. If a measure command is not ⟨m30⟩placed at the beginning of a line, the new measure takes effect on the next line. The point size command changes both the height and the set ⟨l16⟩width. When the point size is increased⟨h16⟩, the leading must also be increased to prevent overlapping. Set-width ⟨w12⟩can be changed independently of the height.←

TYPESET COPY

This example demonstrates how to define and change font, *leading, point size, and measure. There is no limit on the number of font changes within a line.* The placement of commands is important. When using numerous leading instructions within a line, the last instruction in that line will take effect after the line ending instruction. If a measure command is not placed at the beginning of a line, the new measure takes effect on the next line. The point size command changes both the height and the set width. When the point size is increased, the leading must also be increased to prevent overlapping. Set-width can be changed independently of the height.

FILM ADVANCE

KEYSTROKES

(f82m35l12h12)□This example demonstrates film
a(a1)d(a2)v(a3)a(a4)n(a5)c(a6)e and b(b6)a(b5)c(b4)k(b3)-u(b2)p.⊢
⊢
⊢
⊢
If a quad left 🔔z⊢
and a quad right⊣
are needed on the same line, use zero film advance.⊢

TYPESET COPY

This example demonstrates film ad$_{va}$n$_{c}$e and b^{a}c^{k}-up.

If a quad left and a quad right

are needed on the same line, use zero film advance.

HORIZONTAL TABULATION

KEYSTROKES

⟨f82m35l12h12⟩□The tabular measures to be used must be defined before the tabular line is started. In practice it is best to position them at the start of a job, even if the tabular setting is not to be started immediately.⊢
□Remember that if the Horizontal Tabulation instruction is not given before a line, the normal justification measure will be used.⊢
⟨a3⟩⟨t0m5t1m5t2m5t3m8⟩⟨f84⟩🔔tStation⊢Arrive⊥Depart⊥Destination¬↲
⟨a2⟩⟨f82⟩🔔tWatford⊢□9:45⊥□9:52⊥Birmingham¬↲
🔔tLuton⊢10:17⊥10:21⊥Stoke¬↲
⟨a3⟩🔔↲ (Bell Return) is used for column justify within horizontal columns. This command justifies current column as well as advances to next column:⊢
⟨a3⟩⟨f84⟩🔔tStation🔔j.🔔↲ Arrive🔔j.🔔↲ Depart🔔j.🔔↲ Destination¬↲
⟨a2⟩⟨f82⟩🔔tWatford🔔j.🔔↲ □9:45🔔j.🔔↲ □9:52🔔j.🔔↲ Birmingham¬↲
🔔tLuton🔔j.🔔↲ 10:17🔔j.🔔↲ 10:21🔔j.🔔↲ Stoke¬↲

TYPESET COPY

The tabular measures to be used must be defined before the tabular line is started. In practice it is best to position them at the start of a job, even if the tabular setting is not to be started immediately.

Remember that if the Horizontal Tabulation instruction is not given before a line, the normal justification measure will be used.

Station	Arrive	Depart	Destination
Watford	9:45	9:52	Birmingham
Luton	10:17	10:21	Stoke

🔔↲ (Bell Return) is used for column justify within horizontal columns. This command justifies current column as well as advances to next column:

Station	Arrive	Depart	Destination
Watford	9:45	9:52	Birmingham
Luton	10:17	10:21	Stoke

INDENTS

KEYSTROKES

⟨f82m35l12h12⟩□This example demonstrates the use of indents.⊢
⟨i10l⟩The left indent command indents from the left margin in picas and points, and if specified, the command will remain in effect for a given number of lines.⟨i0l⟩⊢
⟨i10r⟩The right indent command works similar to the left indent, except the indent takes place on the right margin.⟨i0r⟩⊢
⟨i5l2⟩Indent left and right stay in effect until cancelled or the number of indented lines are specified in the command. This paragraph is indented five picas on the left for two lines.⊢
⟨i5l⟩⟨i5r⟩It is also possible to have both indents in effect at the same time. The left indent can be cancelled independently of the right indent.⟨ic⟩⊢
⊢
Indent text commands, ⟨itl⟩when inserted in text, cause subsequent lines to start at the point of insertion. The indent text left and indent text right command can be used at the same time.⟨ic⟩⊢
The indent text right and left can also be used for underlining text:⊢
Indent text right, when ⟨itl⟩inserted in text⟨itr⟩, cause subsequent lines to start at the point of△z↲
⟨a3⟩△j△□0↲
⟨b3⟩⟨ic⟩insertion. The indent text left and indent text right command can be used at the same time.⊢

TYPESET COPY

This example demonstrates the use of indents.

The left indent command indents from the left margin in picas and points, and if specified, the command will remain in effect for a given number of lines.

The right indent command works similar to the left indent, except the indent takes place on the right margin.

Indent left and right stay in effect until cancelled or the number of indented lines are specified in the command. This paragraph is indented five picas on the left for two lines.

It is also possible to have both indents in effect at the same time. The left indent can be cancelled independently of the right indent.

Indent text commands, when inserted in text, cause subsequent lines to start at the point of insertion. The indent text left and indent text right command can be used at the same time.

The indent text right and left can also be used for underlining text:
Indent text right, when inserted in text, cause subsequent lines to start at the point of insertion. The indent text left and indent text right command can be used at the same time.

KERNING AND LETTERSPACING

KEYSTROKES

⟨f82m35112h12⟩□This example demonstrates the Kerning and Letterspacing instructions which can be used to achieve the required spacing between characters. The functions are used mostly in large display sizes. The numbers refer to 18ths (or 54ths) em of space to be altered.⊢
⊢
⟨h14⟩AWAY A△q4W△q4A△q4Y A△ab02W△ab02A△ab02Y A△af02W△af09A△af12Y⊢
⊢
⟨h12⟩OVERALL KERN⊢
⟨h14⟩△ak4This command, followed by a single digit from 1 to 9, will initiate 1/54ths to 9/54ths em of kerning to be applied to each character until cancelled. This command cancels the effect of any BELL AE command. A BELL AK0, BELL XK or BELL XE instruction cancels this command.
⊢
⟨h12⟩△xkCANCEL OVERALL KERN⊢
This command, followed by a single digit from 1 to 9, will initiate 1/54ths to 9/54ths em of kerning to be applied to each character until cancelled. This command cancels the effect of any BELL AE command. A BELL AK0, BELL XK or BELL XE instruction cancels this command.
⊢

TYPESET COPY

This example demonstrates the Kerning and Letterspacing instructions which can be used to achieve the required spacing between characters. The functions are used mostly in large display sizes. The numbers refer to 18ths (or 54ths) em of space to be altered.

AWAY AWAY AWAY AWA Y

OVERALL KERN
This command, followed by a single digit from 1 to 9, will initiate 1/54ths to 9/54ths em of kerning to be applied to each character until cancelled. This command cancels the effect of any BELL AE command. A BELL AK0, BELL XK or BELL XE instruction cancels this command.

CANCEL OVERALL KERN
This command, followed by a single digit from 1 to 9, will initiate 1/54ths to 9/54ths em of kerning to be applied to each character until cancelled. This command cancels the effect of any BELL AE command. A BELL AK0, BELL XK or BELL XE instruction cancels this command.

LETTERSPACING

KEYSTROKES

(f82m15l12h12)□⚠xlThis example shows the effect of the Allow and Cancel Letterspacing instructions. In order to emphasize the effect, the measure has been deliberately shortened and no hyphenation has been used. This paragraph has been preceded by the Cancel Letterspacing instruction, and the result is very large inter-word spacing.⊢
⚠al The second paragraph has been set using the Allow Letterspacing instruction, and the effect is obvious. If letterspacing and hyphenation are both cancelled, it is possible to see lines containing just one word in otherwise justified text.⊢
⚠xl

TYPESET COPY

This example shows the effect of the Allow and Cancel Letterspacing instructions. In order to emphasize the effect, the measure has been deliberately shortened and no hyphenation has been used. This paragraph has been preceded by the Cancel Letterspacing instruction, and the result is very large inter-word spacing.

The second paragraph has been set using the Allow Letterspacing instruction, and the effect is obvious. If letterspacing and hyphenation are both cancelled, it is possible to see lines containing just one word in otherwise justified text.

PAGE POSITION/ VARY LINE START

KEYSTROKES

⟨f82m35l12h12⟩□This example demonstrates the use of the Page Position command and the Variable Line Start command.⊢
⊢
⟨m10⟩⟨X24,112⟩The Page Position instruction acts as a new start of text command and it is relative to the Start of Take. It can be used to position text and to start reverse video. The Variable Line Start command ⟨v11⟩⟨b84⟩is added to the Page Position command. The sum of their values and the line measure cannot exceed 70.5 picas. Each new line of text returns to the position determined by the Variable Line Start command. This command will stay in effect until cancelled ⟨v0⟩by a V0 instruction.
⊢

TYPESET COPY

This example demonstrates the use of the Page Position command and the Variable Line Start command.

The Page Position instruction acts as a new start of text command and it is relative to the Start of Take. It can be used to position text and to start reverse video. The Variable Line Start command is added to the Page Position command. The sum of their values and the line measure cannot exceed 70.5 picas. Each new line of text returns to the position determined by the Variable Line Start command. This command will stay in effect until cancelled by a V0 instruction.

PAGE RULES

KEYSTROKES

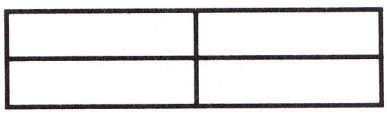
⟨f82m35l12h12⟩□The page rules command uses coordinates to position begin and end points for vertical and horizontal rules. The coordinates are always positioned from the start of take. The simple form below was typeset using page rules.⊢

⊢

⟨e2j138,300k282,300⟩⟨e2j138,300k138,336⟩⟨e2j210,300k210,336⟩
⟨e2j280.5,300k280.5,336⟩⟨e2j138,318k282,318⟩⟨e2j138,336k282,336⟩

TYPESET COPY

The page rules command uses coordinates to position begin and end points for vertical and horizontal rules. The coordinates are always positioned from the start of take. The simple form below was typeset using page rules.



PIECE ACCENTS

KEYSTROKES

⟨f82m35l12h12⟩□There are ten accents on the standard X124 font layout. The accents are pre-fitted and face related. Normal, machine slanted, and true italic examples are given below.⊢
⊢
⟨v12m20⟩Lower casė — n△p!t⊢
Upper case — N△p!t⊢
⊢
△iSlanted — A△p!q, a△p!q⊢
⊢
△r⟨f161⟩Italic — E△p!r, e△p!r⊢
⊢
⟨v0m35⟩⟨f82⟩This command is also used to center one pi character over another, for example △.167△p△.157. To access a pi character locate it on the pi layout chart to find the sequence number; subtract one from that number and use it with the Bell.xyy command. In the command above, the sequence numbers on the pi layout chart are 68 and 58.⊢

TYPESET COPY

There are ten accents on the standard X124 font layout. The accents are pre-fitted and face related. Normal, machine slanted, and true italic examples are given below.

Lower case — ñ
Upper case — Ñ

Slanted — Á, á

Italic — Ë, ë

This command is also used to center one pi character over another, for example ⊟. To access a pi character locate it on the pi layout chart to find the sequence number; subtract one from that number and use it with the Bell.xyy command. In the command above, the sequence numbers on the pi layout chart are 68 and 58.

RESOLUTION

KEYSTROKES

⟨f82m30l12h12⟩⟨1ha⟩□The Linotron 101 is capable of the three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in low-resolution.⊢🔔s
⟨f82m30l12h12⟩⟨1hx⟩The Linotron 101 is capable of the three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in normal-resolution.⊢🔔s
⟨f82m30l12h12⟩⟨1hl⟩The Linotron 101 is capable of the three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in high-resolution.⊢🔔s
⊢

TYPESET COPY

The Linotron 101 is capable of three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in low-resolution.

The Linotron 101 is capable of three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in normal-resolution.

The Linotron 101 is capable of three output resolutions. These can be implemented by the operator at the keyboard or with CORA input coding. The resolution command must be entered before any text is set. This example is set in high-resolution.

REVERSE VIDEO

KEYSTROKES

⟨f82m35l12h12⟩⟨x60,144⟩⟨h24⟩⟨1v312,243⟩🔔av9⟨x0,0⟩⟨h12⟩□This example demonstrates the use of reverse video. Reverse video can be positioned with the page set command. If this command is not used, the reverse image will be exposed from the left margin to the amount specified in the reverse video instruction.⊢
⊢
⟨1v420,28⟩🔔av9If the reverse video is started at the beginning of the line, the reverse image will start at the left margin.⊢
⊢
⟨1v420,28⟩🔔av9⟨m26v9⟩The vary line start has no effect on the positioning of the reverse video command.⊢
⟨v0⟩⊢
⟨x60,144⟩⟨v4m18h12⟩To produce a reverse image above the current base line greater than the current point size value, the reverse video command can be given before any text is set. The positioning of the reverse image can be accomplished with the page position command. The point size command placed in front of the reverse video command will provide the required black area above the base line.⊢
Note: The coding for this reverse area is at the start of job and the vary line start command and the page positioning command are accumulative.⊢
⊢
Accents, E🔔↑Q auto fractions, ⅛ and kerning will work with reverse video in effect.⊢
⊢
🔔ak0⟨a36⟩⟨x0,432⟩⟨v0h49l33m35⟩SPECIAL↓
EFFECT↓
⟨x96,432⟩⟨h42⟩⟨1v228,82⟩🔔av9⟨h34⟩⟨x102,432⟩⟨1v109,34⟩
🔔av9⟨x211,465⟩⟨1v107,34⟩🔔av9⊢
🔔s

(continued on next page)

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This example demonstrates the use of reverse video. Reverse video can be positioned with the page set command. If this command is not used, the reverse image will be exposed from the left margin to the amount specified in the reverse video instruction.

If the reverse video is started at the beginning of the line, the reverse image will start at the left margin.

The vary line start command has no effect on the positioning of the reverse video command.

To produce a reverse image above the current base line greater than the current point size value, the reverse video command can be given before any text is set. The positioning of the reverse image can be accomplished with the page position command. The point size command placed in front of the reverse video command will provide the required black area above the base line.
Note: The coding for this reverse area is at the start of job and the vary line start command and the page positioning command are accumulative.

Accents, É auto fractions, ⅛ and kerning will work with reverse video in effect.

SUPERIORS AND INFERIORS

KEYSTROKES

(f82m35l12h12)□This example demonstrates the use of Superior and Inferior characters. The instructions used are Bell Ux (Up) for Superiors, Bell Dx (Down) for Inferiors, Bell L for Display Superiors, and Bell Y for Autofractions. The figure (x) following the Inferior and Superior instruction selects the required level where:⊢
(i31)⊢
1 🔔.137 second order inferior (🔔y4↓'9🔔y current point size)⊢
2 🔔.137 first order (🔔y2↓'3🔔y current point size)⊢
3 🔔.137 second order superior (🔔y4↓'9🔔y current point size)⊢
(ic)⊢
Display Superiors (e.g. 5🔔1T🔔1H) are set at 🔔y1↓'2🔔y cap height and 🔔y1↓'2🔔y cap size, and they are visually aligned with the head of the normal capital letter. All superior and inferior instructions apply only to the single character following the instruction.⊢
⊢
The Autofraction instruction consists of Bell Y followed by the numerator with a fraction bar and the denominator with a second Bell Y. The numerator is set as a first order superior(s) and the denominator is set as an inferior(s).⊢
⊢

TYPESET COPY

This example demonstrates the use of Superior and Inferior characters. The instructions used are Bell Ux (Up) for Superiors, Bell Dx (Down) for Inferiors, Bell L for Display Superiors, and Bell Y for Autofractions. The figure (x) following the Inferior and Superior instruction selects the required level where:

1 = second order inferior (4/9 current point size)
2 = first order (2/3 current point size)
3 = second order superior (4/9 current point size)

Display Superiors (e.g. 5^{TH}) are set at ½ cap height and are visually aligned with the head of the normal capital letter. All superior and inferior instructions apply only to the single character following the instruction.

The Autofraction instruction consists of Bell Y followed by the numerator with a fraction bar and the denominator with a second Bell Y. The numerator is set as a first order superior(s) and the denominator is set as an inferior(s).

VERTICAL AND HORIZONTAL RULES

KEYSTROKES

(f82m35l12h12)□The example below shows how to make a simple form using horizontal and vertical rules. Tabs are used to position the vertical rules, and the autoleader command is used to fill the measure with the horizontal rule. The height of the vertical rule is determined by the current leading command.⊢
⊢
⊢

(T0M6T1M6)
(V11.6)(M12L18)Δj□2↲
Δt□z□2⊢□2 □2□↲ ↲
Δj□2↲
Δt□z□2⊢□2 □2□↲ ↲
Δj□2↲

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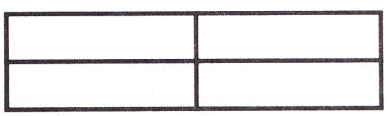
The example below shows how to make a simple form using horizontal and vertical rules. Tabs are used to position the vertical rules, and the autoleader command is used to fill the measure with the horizontal rule. The height of the vertical rule is determined by the current leading command.



VERTICAL TABULATION

KEYSTROKES

⟨f82m35l12h12⟩□This example shows how the Vertical Tabulation routine permits justified text to be set in a tabular format. The tabular measure must be defined in the same way as for horizontal tabulation before starting the text.⊢⟨a3⟩
⟨t0m10t1m2t2m10t3m2t4m10⟩␇vsThe first column is preceded by the Bell VS instruction, which calls the first tabular measure and sets a marker to show where the table started.⊢
␇vc␇vcAll subsequent columns begin with the Bell VC instruction, causing them to be set in the next column with their tops aligned with the first line of the first column.⊢
␇vc␇vcThe last column in the table is followed by the Bell VE instruction. This ensures that the photographic material is advanced sufficiently to clear the longest column of text.⊢
␇ve⟨a3⟩The following text is set full out until the next Bell VS instruction is received.⊢
⟨a3⟩When deciding the column measures, the space between the columns must also be accounted for. This is because the start position of each column is determined by addition of all preceding column measures.⊢
In the most simple case where all the gutter measures are equal, the column measures can include the gutter, and an Indent Right equal to the gutter ensures the required space is left blank.⊢

TYPESET COPY

This example shows how the Vertical Tabulation routine permits justified text to be set in a tabular format. The tabular measure must be defined in the same way as for horizontal tabulation before starting the text.

The first column is preceded by the Bell VS instruction, which calls the first tabular measure and sets a marker to show where the table started.

All subsequent columns begin with the Bell VC instruction, causing them to be set in the next column with their tops aligned with the first line of the first column.

The last column in the table is followed by the Bell VE instruction. This ensures that the photographic material is advanced sufficiently to clear the longest column of text.

The following text is set full out until the next Bell VS instruction is received.

When deciding the column measures, the space between the columns must also be accounted for. This is because the start position of each column is determined by addition of all preceding column measures.

In the most simple case where all the gutter measures are equal, the column measures can include the gutter, and an Indent Right equal to the gutter ensures the required space is left blank.

WORD SPACING

KEYSTROKES

⟨f82m35l12h12⟩⟨1W2,6,18⟩□This setting establishes the minimum word space as 2/18 of an em and the maximum wordspace as a full em. The optimum or average wordspace which is 6/18 is used for quadded lines.⊢
⟨1W0,0,18⟩ This establishes zero as the average value.⊢

TYPESET COPY

This setting establishes the minimum word space as 2/18 of an em and the maximum wordspace as a full em. The optimum or average wordspace which is 6/18 is used for quadded lines.
Thisestablisheszeroastheaveragevalue.

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Table 2. Linotron 101 Character Access Coding

There are two standard layouts for the 101 typesetter: Y-124 and Y-154. The Character Access Chart is listed below.

REV TTS	UNSHIFT	SHIFT	SUPER SHIFT	REV TTS	UNSHIFT	SHIFT	SUPER SHIFT
30	a	A	æ	74	7	7/8	ø
23	b	B	£	54	8	—	Ø
16	c	C	†	43	9	&	¡
22	d	D	œ	55	0	?	¿
20	e	E	ˆ	47	.	.	· (cntr.period)
26	f	F	Œ	46	,	,	¢
13	g	G	å	53	;	:	fl
5	h	H	Å	70	$	!	fi
14	i	I	ı	61	)	(	/ (shill)
32	j	J	ß	62	-	%	— (fig dash)
36	k	K	1/3	42	’	‘	/ (frac bar)
11	l	L	2/3	45	em ldr	em ldr	−‡
7	m	M	]	44	not used	not used	not used
6	n	N	[	63	UR	UR	UR
3	o	O	¯	75	en ldr	en ldr	+‡
15	p	P	˘	40	thin sp	thin sp	”
35	q	Q	´	56	en sp	en sp	*f*
12	r	R	¨	64	em sp	em sp	‰
24	s	S	Æ	73	LR	LR	LR
1	t	T	˜	00	tape feed	tape feed	tape feed
34	u	U	ˇ	02	return	return	not used
17	v	V	‡	4	sp. band	sp. band	not used
31	w	W	`	10	elevate (⟨)	elevate (⟨)	not used
27	x	X	§	33	shift	shift	not used
25	y	Y	¸	37	unshift	unshift	not used
21	z	Z	*	50	paper feed (⟩)	paper feed (⟩)	not used
67	1	1/8*	‹	51	supershift	supershift	not used
71	2	1/4	›	57	quad center	quad center	not used
60	3	3/8	«	66	quad left	quad left	not used
52	4	1/2	»	72	bell	bell	not used
41	5	5/8	“	76	quad right	quad right	not used
65	6	3/4	”	77	rubout	rubout	not used

‡The Y-154 layout contains true drawn fractions. If Y-154 layout and font are used, the plus and minus signs will be generated from the font in use. In all other standard layouts, if the plus and minus signs are required, the Universal Commercial Pi font (Sheet No. 97) must be loaded.